

CLEAN COPY OF ALL PENDING CLAIMS

53. A semiconductor wafer fabrication system comprising:

a sealed chamber for processing said semiconductor wafer; and a head assembly comprising:

a modulated light source exposing at least a portion of said semiconductor wafer to light having a wavelength and modulated at a frequency; and

a surface photovoltage sensor detecting a surface photovoltage induced at the surface of said semiconductor wafer in response to said light without contacting said wafer, wherein said photovoltage is used to calculate an electrical property of said semiconductor wafer.

said surface voltage sensor of said head assembly located within said sealed chamber.

54. The semiconductor wafer fabrication system of claim 53 wherein said sealed chamber is a reduced pressure chamber.

55. The semiconductor wafer fabrication system of claim 53 wherein said sealed chamber is a chemically reactive gas chamber.

56. The semiconductor wafer fabrication system of claim 53 wherein said sealed chamber is an inert environment chamber.

57. The semiconductor wafer fabrication system of claim 53 wherein said head assembly is entirely located within said sealed chamber.